

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-89 (Canceled)

Claim 90 (Currently amended): An electronic component comprising:

a substrate including a conductive element disposed at a surface of the substrate;
and

a freestanding, resilient, electrically conductive contact structure comprising a base portion ~~electrically coupled to the conductive element at the surface of the substrate attached to the conductive element~~, a tip portion displaced a vertical distance away from the surface of the substrate, and a beam portion between the base portion and the tip portion, a length of the beam portion extending from where the base portion is attached to the conductive element to where the beam portion meets the tip portion, the beam portion being displaced away from the surface of the substrate along all of the length, the base portion comprising a plurality of layers, a first of the layers comprising a first material and a second of the layers comprising a second material, the first material being different than the second material,

wherein:

a width ~~a length of the beam portion extends from the base portion to the tip portion, and~~ dimension of the beam portion decreases along all of the length from the base portion to the tip portion of the beam portion,

all of the length of the beam portion is shaped in a convex curve that is convex with respect to the surface of the substrate, and

the width dimension of the beam portion is parallel to the surface of the substrate where the beam portion and the tip portion meet.

Claim 91 (Previously presented): The electronic component of claim 90 further comprising:

a connecting layer coupling the conductive element to internal circuitry within the electronic component;

a passivation layer disposed on the surface of the substrate, the passivation layer having an opening at the conductive element; and

at least one electrically conductive layer disposed on the passivation layer and on the conductive element,

wherein the base portion of the contact structure is electrically coupled through the at least one electrically conductive layer to the conductive element.

Claim 92 (Previously presented): The electronic component of claim 91, wherein the conductive element comprises a terminal.

Claim 93 (Canceled)

Claim 94 (Previously presented): The electronic component of claim 91, wherein the tip portion comprises a pointed end.

Claim 95 (Previously presented): The electronic component of claim 91, wherein the substrate comprises a semiconductor device.

Claim 96 (Currently amended): The electronic component of claim [[91]] 124, wherein the contact structure comprises the plurality of layers.

Claim 97 (Previously presented): The electronic component of claim 96, wherein ones of the layers comprise metals.

Claim 98 (Previously presented): The electronic component of claim 91 further comprising a plurality of the contact structures, wherein adjacent contact structures are spaced between 2.5 microns and 2000 microns from each other.

Claim 99 (Previously presented): The electronic component of claim 91, wherein the tip portion comprises a beveled peripheral edge.

Claim 100 (Previously presented): The electronic component of claim 91, wherein the beam portion comprises a triangular shape.

Claim 101 (Previously presented): The electronic component of claim 100, wherein the tip portion comprises a quadrilateral shape.

Claim 102 (Previously presented): The electronic component of claim 101, wherein the tip portion comprises a rectangular shape.

Claim 103 (Canceled)

Claim 104 (Currently amended): An electronics system comprising:

a first substrate including a conductive element disposed at a surface of the first substrate;

a freestanding, resilient, electrically conductive contact structure comprising a base portion ~~electrically coupled~~ attached to the conductive element of the first substrate, one and only one tip portion displaced a vertical distance away from the surface of the first substrate, and one and only one beam portion between the base portion and the tip portion, wherein a length of the beam portion extends from where the base portion is attached to the conductive element to where the beam portion meets the tip portion, the beam portion being displaced away from the surface of the substrate along all the length of the beam portion, [[and]] wherein a width of the beam portion decreases along all of the length from the base portion to the tip portion of the beam portion, all of the length of the beam portion is shaped in a convex curve that is convex with respect to the surface of the substrate, and the width dimension of the beam portion is parallel to the surface of the substrate where the beam portion and the tip portion meet; and

a second substrate including a conductive contact element in physical contact with the one and only one tip portion of the contact structure and deflecting the contact structure, the contact structure exerting a force against the contact element due to the resiliency of the contact structure.

Claim 105 (Previously presented): The electronics system of claim 104 further comprising:

a connecting layer coupling the conductive element to internal circuitry within the first substrate;

a passivation layer disposed on the surface of the first substrate, the passivation layer having an opening at the conductive element of the first substrate; and

at least one electrically conductive layer disposed on the passivation layer and on the conductive element of the first substrate,

wherein the contact structure is electrically coupled through the at least one electrically conductive layer to the conductive element of the first substrate.

Claim 106 (Previously presented): The electronics system of claim 105, wherein the conductive element comprises a terminal.

Claim 107 (Canceled)

Claim 108 (Previously presented): The electronics system of claim 105, wherein the tip portion comprises a pointed end.

Claim 109 (Previously presented): The electronics system of claim 105, wherein the first substrate comprises a semiconductor device.

Claim 110 (Previously presented): The electronics system of claim 105, wherein the contact structure comprises a metal layer.

Claim 111 (Previously presented): The electronics system of claim 110, wherein the contact structure comprises a plurality of metal layers.

Claim 112 (Previously presented): The electronics system of claim 105 further comprising a plurality of the contact structures, wherein adjacent contact structures are spaced between 2.5 microns and 2000 microns from each other.

Claim 113 (Previously presented): The electronics system of claim 105, wherein the tip portion comprises a beveled peripheral edge.

Claim 114 (Previously presented): The electronics system of claim 105, wherein the beam portion comprises a triangular shape.

Claim 115 (Previously presented): The electronics system of claim 114, wherein the tip portion comprises a quadrilateral shape.

Claim 116 (Previously presented): The electronics system of claim 115, wherein the tip portion comprises a rectangular shape.

Claim 117 (Cancel)

Claim 118 (Currently amended): The electronic component of claim [[90]] 124, wherein the plurality of layers comprise an electrically conductive seed layer and a layer of structural material disposed on the seed layer.

Claim 119 (Currently amended): The electronic component of claim [[90]] 124, wherein the beam portion comprises the plurality of layers of materials.

Claim 120 (Previously presented): The electronic component of claim 90, wherein the vertical distance is perpendicular to the surface of the substrate at which the conductive element is disposed.

Claim 121 (Previously presented): The electronic component of claim 90, wherein the tip is disposed above the surface of the substrate at which the conductive element is disposed.

Claim 122 (Previously presented): The electronics system of claim 104, wherein the vertical distance is perpendicular to the surface of the substrate at which the conductive element is disposed.

Claim 123 (Previously presented): The electronics system of claim 104, wherein the tip is disposed above the surface of the substrate at which the conductive element is disposed.

Claim 124 (New): The electronic component of claim 90 wherein the base portion comprises a plurality of layers, a first of the layers comprising a first material and a second of the layers comprising a second material, the first material being different than the second material.

Claim 125 (New): The electronic component of claim 90 further comprising a plurality of conductive contact structures each comprising a base portion attached to a conductive element disposed at the surface of the substrate, a tip portion displaced a vertical distance away from the surface of the substrate, and a beam portion between the base portion and the tip portion, wherein each of the contact structures is free standing and structurally distinct from the others of the contact structures.

Claim 126 (New): The electronic component of claim 125 further comprising a stop structure disposed on the surface of the substrate, the stop structure comprising a plurality of openings, tip portions of the plurality of contact structures extending through the openings.

Claim 127 (New): The electronic component of claim 126, wherein the stop structure covers substantially an entire portion of the surface of the substrate.

Claim 128 (New): The electronic component of claim 125, wherein:
the base portion of each contact structure is generally rectangular,
the tip portion of each contact structure is generally rectangular, and
a spacing between centers of adjacent tip portions is less than a spacing between centers of adjacent base portions.

Claim 129 (New): The electronics system of claim 104 further comprising a plurality of conductive contact structures each comprising a base portion attached to a conductive element disposed at the surface of the substrate, a tip portion displaced a vertical distance away from the surface of the substrate, and a beam portion between the base portion and the tip portion, wherein each of the contact structures is free standing and structurally distinct from the others of the contact structures.

Claim 130 (New): The electronics system of claim 129 further comprising a stop structure disposed on the surface of the substrate, the stop structure comprising a plurality of openings, tip portions of the plurality of contact structures extending through the openings.

Claim 131 (New): The electronics system of claim 130, wherein the stop structure covers substantially an entire portion of the surface of the substrate.

Claim 132 (New): The electronics system of claim 129, wherein:

- the base portion of each contact structure is generally rectangular,
- the tip portion of each contact structure is generally rectangular, and
- a spacing between centers of adjacent tip portions is less than a spacing between centers of adjacent base portions.